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		SPECIFICATION	PHOTOVOLTAICS DIV.

SPECIFICATION FOR

SOLAR MODULE

MODEL No. NT51A85E

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2. Please obey the instructions mentioned below for actual use of this module.

(1) Main applications of the modules as follows.
Telemeter system, Microwave repeater station, Other telecommunication system(Terminal), Village electrification, Monument, Toy, etc. 1

(2) Please take proper steps in order to maintain reliability and safety, in case this module is used for the uses ❑ entioned below which require high reliability.
Unit concerning control and safety of a vehicle(air plane, train, automobile, etc.), Traffic signal, Road sign, Security system, Other safety system, etc.

(3) Please don't use for the uses mentioned below which require extremely high reliability.
Space equipment, Telecommunication system(Trunk), Nuclear control system, Medical system(relating to any fatal element), etc.

CUSTOMER'S APPROVAL

DATE

BY

PRESENTED

BY

T. MATSUTANI

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Issue Record

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Revision Record

ISSUE	DATE	CHANGE	PAGE
2	2.Sep. 1994	• Change of Drawing (No. SSE94209)	8
3	16.Feb. 1995	• Change of notes	1 and 2
		• Change of Min. output spec. (Table 3)	3

1. SCOPE

This document describes the outline specific ations of solar module NT51A85E .

2. SPECIFICATION

The following tables, figures and drawings form a part of this specification]:

Table 1, Table 2, Table 3

Fig.1 , Fig.2 , Fig.3

Drawing No. SSE94208,SSE94209

3. NOTES

(1) When mounting solar modules on structure, keep the displacement of the forth toner of solar modules smaller than 2mm for 1000mm of diagonal of solar modules after other 3 corners are placed on structure.

(2) Be careful in handling polarity of insulated output wires.

(3) Never touch the output terminals with bare hands when the module is irradiated.
Cover the surface of module by sufficiently thick cloth or something suitable to prevent incident light, and handle the output terminals with rubber-gloved hands not to receive electric shock.

(4) Do not drop tools or hard things on the glass of solar module.

(5) Do not scractch the back film by hard things.

(6) Do not wear metallic jewelry which may become cause of electric shock during installation.

(7) When part of solar module is shadowed, hot spot may be caused.Therefore do not shadow cells.

(8) Install solar modules and ground frames in accordance with applicable law of each country.

(9) Consult the government office before installation of solar modules in case that permission of installation is required by law.

(10) Solar modules should be installed and maintained by qualified personnel.

(11) Electro-optical characteristics degrade when glass becomes dirty.

(12) Do not pour solvent on solar modules when cleaning.

(13) Do not produce sparks near flammable vapors.

(14) Follow safety precautions of the battery manufacturer if batteries are used with modules.

(15) Do not expose solar module to sunlight concentrated with mirrors, lenses or similar means.

(16) consult manufacturer for proper installation on special vehicles such as boat and campers.

(17) Keep solar modules away from children.

(18) At the four corners of solar modules, the end of longer alluminum frames is equiped with the semicircular scuppers. Be careful not to stop up these holes by inappropriate installation.

(19) In heavy snow fall area modules should be installed correctly in order to avoid stress by heavy snow.

(20) In strong wind area modules should be installed correctly in order to avoid stress by strong wind.

4. OTHERS

Any doubt as to this specification shall be determined in good faith upon mutual consultation of the both parties.

SHARP

SOLAR MODULE

Model No. NT51A85E

Table 1. Specifications

Cell	5 inch square Silicon solar cells
No. of Cells and Connection	36 in series
Application	DC 12V systems
Maximum system voltage	DC 600 V
Series fuse rating	10 A
Maximum power	85.5 W (Typ.)
Dimensions	1200x 530X 35 mm
Weight	8.5 kg

Table 2. Absolute maximum ratings

Rating	Value	Unit
Operating temperature	-40 ~ +90	℃
Storage temperature	-40 ~ +90	℃
Dielectric withstand voltage	2200 max	**V-DC**
Withstand wind speed	60 max	m/s

Table 3. Electro-optical characteristics

Characteristic	Symbol	Min.	Typ.	Unit	Condition
Open circuit voltage	Voc	—	22.0	v	
Maximum power voltage	Vpm		17.4	V	Irradiance:
Short circuit current	Isc	—	5.50	A	1000 W/m′
Maximum power current	I pm	—	4.91	A	
Maximum power	Pm	81.2	85.5	W	Module
Encapsulated solar cell efficiency	η_c	—	16.0	%	temperature: 25 ℃
Module efficiency	η_m		13.4	%	

Model NT51A85E

(Module Temperature: 25℃)

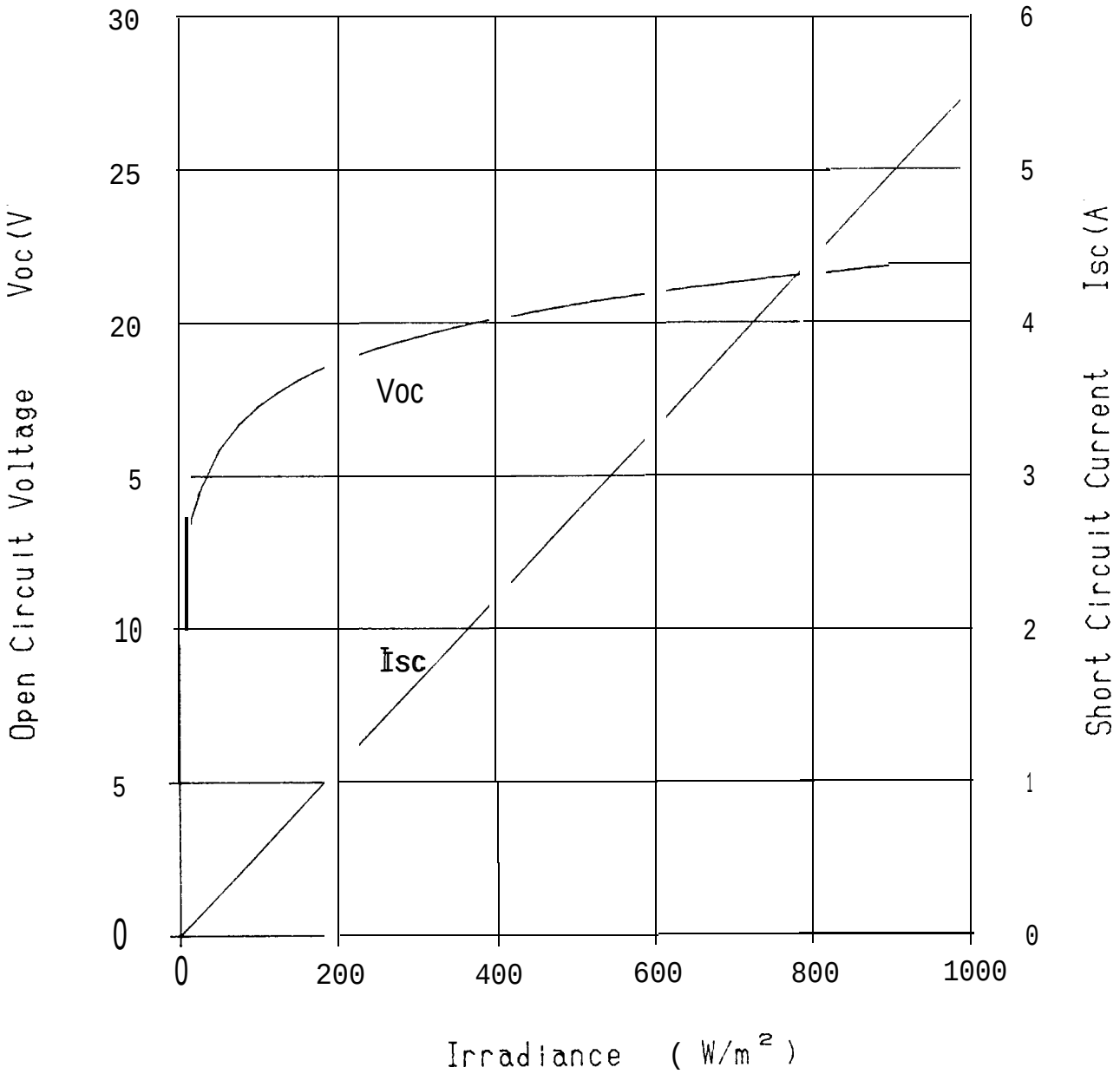

Fig.1 Open Circuit Voltage, Short Circuit Current vs. Irradiance Characteristics

Model NT51A85E

(Module Temperature: 25C)

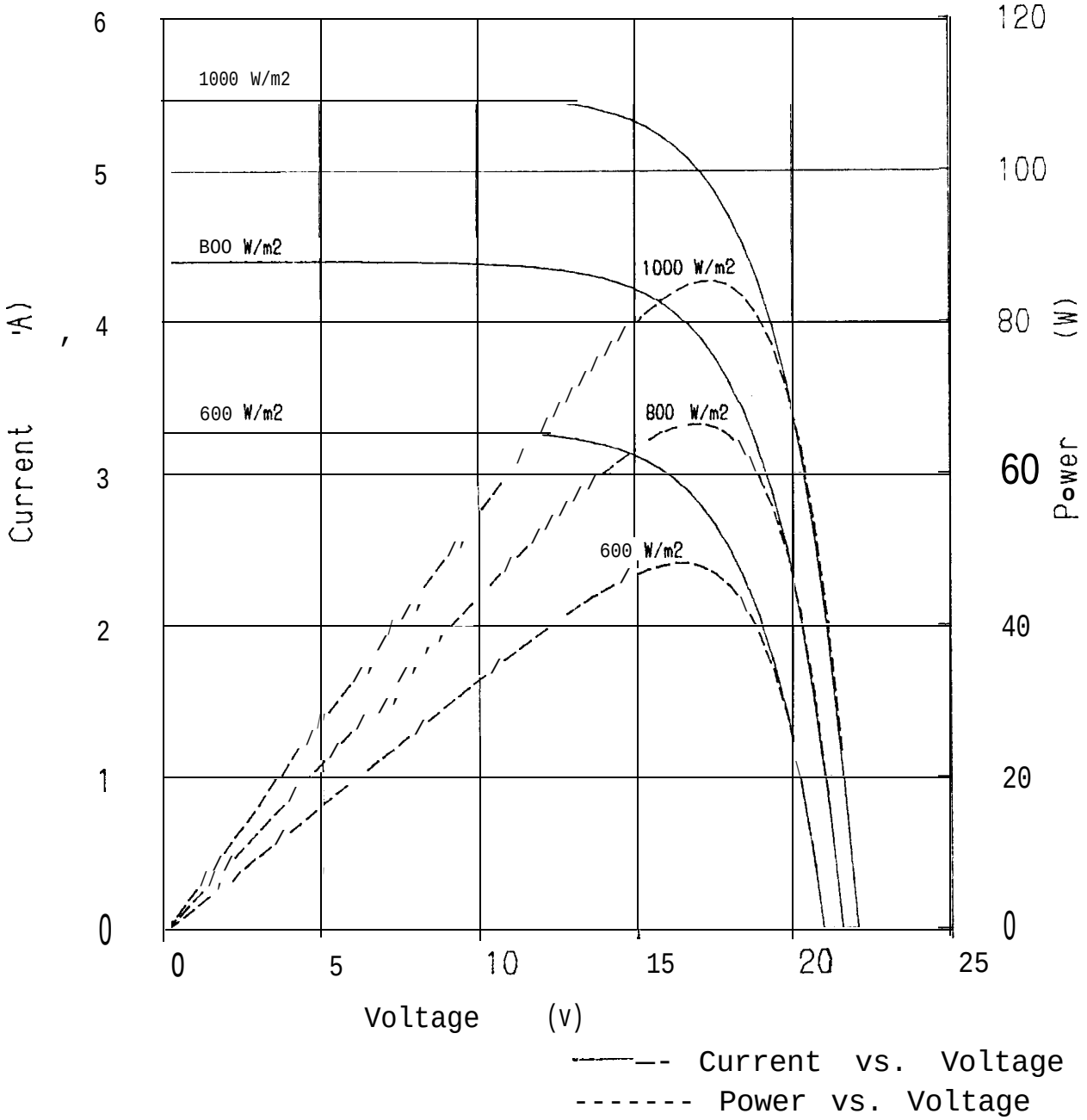

Fig.2 Current, Power, vs. Voltage Characteristics

Model NT51A85E

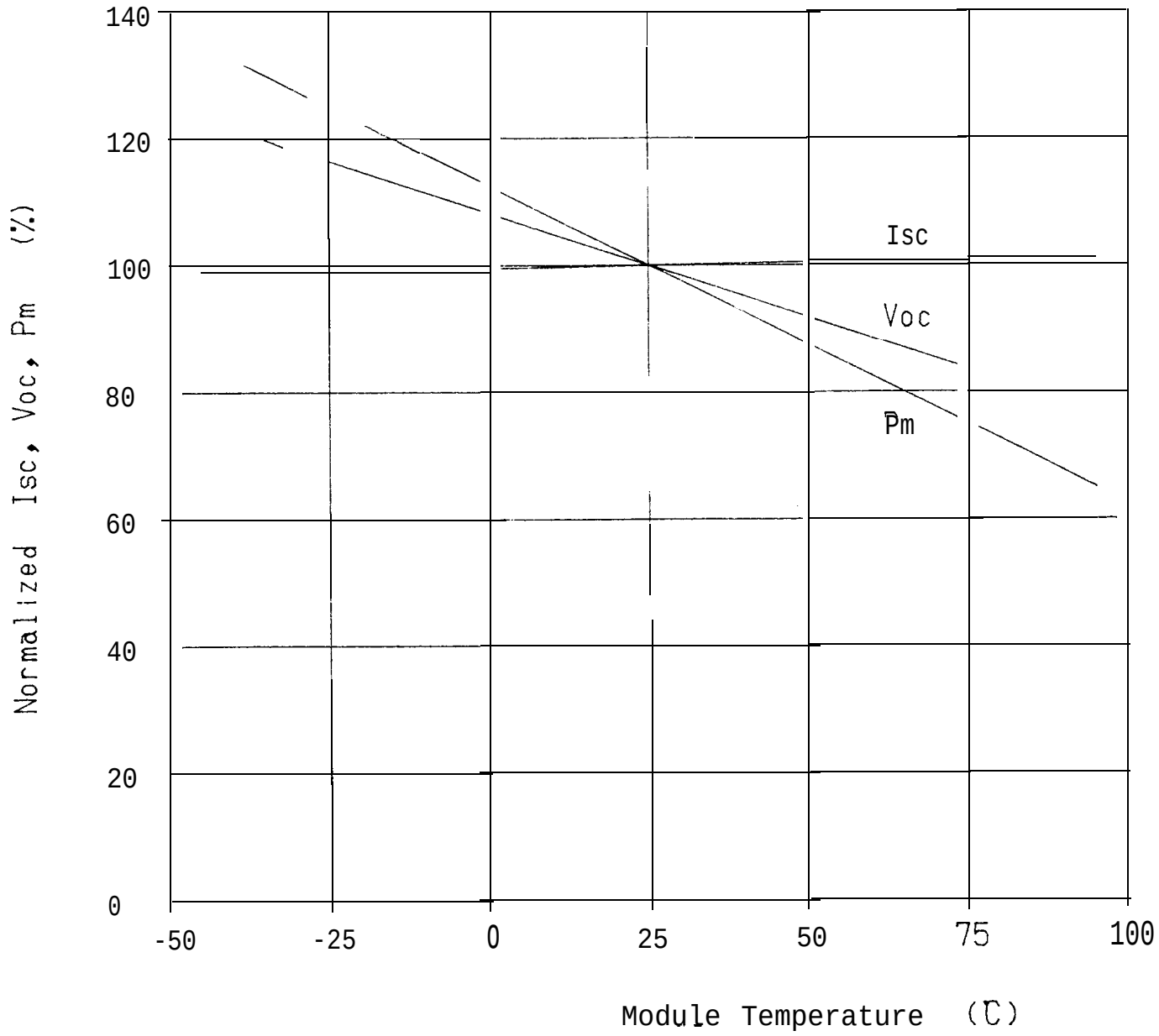

Fig.3 Normalized Isc,Voc,Pm
vs. Module Temperature Characteristics